File NR G2-30567
WR Doc ID 4716101

DEPARTMENT OF ECOLOGY
State of Washington

State of Washington
REPORT OF EXAMINATION
FOR WATER RIGHT APPLICATION

PRIORITY DATE	WATER RIGHT NUMBER
2/8/2011	G2-30567

MAILING ADDRESS	SITE ADDRESS (IF DIFFERENT)
RAINIER VIEW WATER CO PO BOX 44427 TACOMA WA 98448	3705 103RD AVE CT NW GIG HARBOR WA 98335

Quantity Authorized for Withdrawal or Diversion

WITHDRAWAL OR DIVERSION RATE	UNITS	ANNUAL QUANTITY (AF/YR)
30	GPM	14

Purpose

	WITHDRAWAL OR DIVERSION RATE			ANNUAL QUANTITY (AF/YR)		
PURPOSE	ADDITIVE	NON-ADDITIVE	UNITS	ADDITIVE	NON-ADDITIVE	PERIOD OF USE (mm/dd)
Municipal	30		GPM	14		01/01 - 12/31

REMARKS: This appropriation is associated with the Shaw's Cove Water System (ID # 77960) and G2-23999 and G2-28592.

IRRIGATED ACRES		PUBLIC WATER SYSTEM INFORMATION	
ADDITIVE	NON-ADDITIVE	WATER SYSTEM ID	CONNECTIONS
0	0	77960	

Source Location

COUNTY	WATERBODY	TRIBUTARY TO	WATER RESOURCE INVENTORY AREA
PIERCE	GROUNDWATER		15-KITSAP

SOURCE FACILITY/DEVICE	PARCEL	WELL TAG	TWP	RNG	SEC	QQ Q	LATITUDE	LONGITUDE
103rd Ave well (SO3)	0121218026	AEF438	21N	01E	21	SE SE	47.29159	-122.675

Datum: NAD83/WGS84

Place of Use (See Attached Map)

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE

The place of use (POU) of this water right is the service area described in the most recent Water System Plan/Small Water System Management Program approved by the Washington State Department of Health, so long as the water system is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386 may have the effect of revising the place of use of this water right.

Proposed Works

A well, 6-inches in diameter and 91 feet deep

Development Schedule

BEGIN PROJECT	COMPLETE PROJECT	PUT WATER TO FULL USE
Started	June 1, 2015	June 1, 2018

Measurement of Water Use

How often must water use be measured?	Monthly
How often must water use data be reported to Ecology?	Upon Request by Ecology
What volume should be reported?	Total Annual Volume
What rate should be reported?	Annual Peak Rate of Withdrawal (gpm or cfs)

Provisions

Wells, Well Logs and Well Construction Standards
All wells constructed in the state must meet the construction requirements of WAC 173-160 titled "Minimum Standards for the Construction and Maintenance of Wells" and RCW 18.104 titled "Water Well Construction". Any well that is unusable, abandoned, or whose use has been permanently discontinued must be decommissioned. Additionally, a well in disrepair that its continued use is impractical or is an environmental, safety or public health hazard must also be decommissioned.

All wells must be tagged with a Department of Ecology unique well identification number. If you have an existing well and it does not have a tag, please contact the well-drilling coordinator at the regional Department of Ecology office issuing this decision. This tag must remain attached to the well. If you are required to submit water measuring reports, reference this tag number.

Installation and maintenance of an access port as described in WAC 173-160- 291(3) is required.

Department of Health Requirements
Prior to any new construction or alterations of a public water supply system, the State Board of Health rules require public water supply owners to obtain written approval from the Office of Drinking Water of the Washington State Department of Health. Please contact the Office of Drinking Water at Southwest Drinking Water Operations, 243 Israel Road S.E., PO Box 47823, Tumwater, WA 98504-7823, (360) 236-3030.

Water Use Efficiency
The water right holder is required to maintain efficient water delivery systems and use of up-to-date water conservation practices consistent with RCW 90.03.005.

Proof of Appropriation
The water right holder shall file the notice of Proof of Appropriation of water (under which the certificate of water right is issued) when the permanent distribution system has been constructed and the quantity of water required by the project has been put to full beneficial use. The certificate will reflect the extent of the project perfected within the limitations of the permit. Elements of a proof

inspection may include, as appropriate, the source(s), system instantaneous capacity, beneficial use(s), annual quantity, place of use, and satisfaction of provisions.

Measurements, Monitoring, Metering and Reporting
An approved measuring device must be installed and maintained for each sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use". WAC 173-173 describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition the Department of Ecology for modifications to some of the requirements.

Recorded water use data can be submitted via the Internet. To set up an Internet reporting account, contact the Southwest Regional Office. If you do not have Internet access, you can still submit hard copies by contacting the Southwest Regional Office for forms to submit your water use data.

Schedule and Inspections
Department of Ecology personnel, upon presentation of proper credentials, will have access at reasonable times, to the project location, and to inspect at reasonable times, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.

Findings of Facts
Upon reviewing the investigator's report, I find all facts, relevant and material to the subject application, have been thoroughly investigated. Furthermore, I concur with the investigator that water is available from the source in question; that there will be no impairment of existing rights; that the purpose(s) of use are beneficial; and that there will be no detriment to the public interest.

Therefore, I ORDER approval of Application No. G2-30567, subject to existing rights and the provisions specified above.

Your Right To Appeal

You have a right to appeal this Order to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of the Order.

File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.

- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

- You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel RD SW Ste 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

Signed at Olympia, Washington, this 5th day of July 2012.

Michael J. Gallagher

Michael J. Gallagher, Section Manager

For additional information visit the Environmental Hearings Office Website: http://www.eho.wa.gov. To find laws and agency rules visit the Washington State Legislature Website: http://www1.leg.wa.gov/CodeReviser.

INVESTIGATOR'S REPORT
Application for Water Right -- Rainier View Water Co
Water Right Control Number G2-30567
Tammy Hall, Department of Ecology

BACKGROUND

On February 8, 2011, Jill Van Hulle, representing Rainier View Water Company (RVWC) filed *Water Right Application* G2-30567 requesting 30 gallons per minute (gpm) and 14 acre-feet (ac-ft) per year for multiple domestic supply. This project is located in the Kitsap Water Resource Inventory Area (WRIA) 15.

Priority Processing

This application is being priority processed. The criteria in WAC 173-152-050 allows an application to be processed prior to competing applications when it qualifies as a public health or safety emergency.

Attributes of Application

Table 1. Application summary.

Name	*Rainer View Water Company*
Priority Date	2/8/2011
Instantaneous Rate	30 gpm
Annual Quantity	14 af/yr
Purpose(s) of Use	Municipal Supply Purposes
Period of Use	Continuous use
Place(s) of Use	The place of use (POU) of this water right is the service area described in the most recent Water System Plan/Small Water System Management Program approved by the Washington State Department of Health, so long as the water system is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386 may have the effect of revising the place of use of this water right

Table 2. Proposed point of withdrawal.

Source Name	*Parcel*	*WellTag*	*Twp*	*Rng*	*Sec*	*QQ Q*	*Latitude*	*Longitude*
103rd Ave well (SO3)	0121218026	AEF438	21N	01E	03	SE SE	47.29159	-122.675

Legal Requirements for Approval of Appropriation of Water

RCWs 90.03 and 90.44 authorizes the appropriation of public water for beneficial use and describes the process for obtaining water rights. Laws governing the water right permitting process are

addressed in RCW 90.03.250 through 90.03.340 and RCW 90.44.050. In accordance with RCW 90.03.290, Ecology must make determinations on these four criteria in order to approve an application for water rights:

- Water must be available for appropriation.
- There must be no impairment of existing rights.
- The water use must be a beneficial use.
- Approving the application must not be detrimental to the public interest.

This report serves as the written findings of fact concerning all things investigated regarding Water Right Application G2-30567.

Public Notice

The applicant published public notice for this project proposal in *The News Tribune* of Pierce County once a week for two consecutive weeks beginning on December 1 and ending December 8, 2011. Because of an error regarding the well location, the application was re-advertised from March 22 to March 29, 2012. No protests or letters of concern were received in response to either notices.

State Environmental Policy Act (SEPA)

A SEPA determination evaluates if a proposed withdrawal will cause significant adverse environmental impacts. A SEPA threshold determination is required for:

1) Surface water applications for more than 1 cubic feet per second (cfs). For agricultural irrigation, the threshold increases to 50 cfs, if the project isn't receiving public subsidies.
2) Groundwater applications requesting more than 2,250 gpm.
3) Projects with several water right applications where the combined withdrawals meet the conditions listed above.
4) Projects subject to SEPA for other reasons (e.g., the need to obtain other permits that are not exempt from SEPA).
5) Applications that are part of several exempt actions that collectively trigger SEPA under WAC 197-11-305.

This application does not meet any of these conditions and is categorically exempt from SEPA.

INVESTIGATION

The material reviewed in support of this application included the following:

- The State Surface Water Codes, administrative rules, and policies.
- Department of Ecology's Water Right Tracking System (WRTS) database.
- Topographic and local area maps.
- Notes from a site visit on March 12, 2012.
- Hydrogeologic memorandum written by Tammy Hall, licensed hydrogeologist, with Water Resources Southwest Regional Office, dated May 28, 2012.

Project Description

The project area is on the Gig Harbor Peninsula, located in northwestern Pierce County, at the southern end of the Puget Lowland. The Gig Harbor Peninsula is surrounded by marine embayments on three sides and connects to the larger Kitsap Peninsula.

Under this application, the 103rd Ave well will be another source in the Shaws Cove water system. Once a permit is issued, the 103rd Ave and existing Shaws Cove water systems will be combined by piping. The 103rd Ave water system currently is a stand-alone Group B system serving seven connections.

Currently the existing Shaws Cove water system cannot expand due to capacity and limits of their existing water rights. Approval of this application will improve the reliability of the system and allow RVWC to serve 20 more connections. These connections will consist of exempt wells impaired by seawater intrusion and new construction.

Several wells in the vicinity of Shaws Cove and the adjoining Horsehead Bay area have experienced relatively high chloride levels due to seawater intrusion.

Proposed Use and System Demand

Although the application requested water for multiple domestic supply purposes, RVWC is a considered a municipal water supplier in RCW 90.03.015. Therefore, the proposed use for this project is municipal supply purposes.

The 103rd Ave well operates at 30 gpm. It currently supplies seven homes as an exempt well at a rate of about three ac-ft per year. This application requests to increase the annual quantity to 14 ac-ft.

Presently Shaws Cove water system is limited to 60 connections. With the approval of this application, the system will be allowed to expand to serve 87 connections. This will be a combination of lots for new construction and existing exempt wells with seawater intrusion problems.

Other Rights Appurtenant to the Place of Use

The Shaws Cove water system (DOH Id# 77960) is authorized by one water right certificate and one permit. Details of these water rights are summarized below in Table 3.

Table 3. RVW's Shaws Cove water system water rights.

Certificate/Permit #	*Priority date*	*Source*	*Instantaneous rate (gpm)*	*Annual quantity (ac-ft/yr)*
G2-23999	11/12/1975	Well 1	40	5
G2-28952P	10/27/1993	Well 2	25	25
Total			65	30

Hydrologic/Hydrogeologic Evaluation

General area geology

The Gig Harbor Peninsula is in northwestern Pierce County, at the southern end of the Puget Lowland, in WRIA 15 (Kitsap Basin). The subsurface in the Gig Harbor Peninsula consists of unconsolidated and

semi-consolidated sediments between 1,200 to 2,000 feet thick (Jones, 1996). These sediments are underlain by Miocene volcanic and sedimentary bedrock (Garling, 1965).

The unconsolidated sediments consist mostly of glacially derived deposits left behind by at least six glaciations that took place during the last 2 million years. The most recent glaciation is termed the Vashon glaciation and occurred around 10,000 years ago.

Garling (1965) describes a typical glacial sequence of glacial deposits as consisting of the following units, listed from youngest (top) to oldest (bottom):

- Recessional outwash. In the project area, recessional outwash consists of a discontinuous mantle of sand and gravel that overlies the till. It is often found on hilltops.
- Till. Glacial till is a compact and unsorted mixture of cobbles and pebbles in a binder of sandy silt and clay. Vashon till is typically gray to bluish-gray.
- Advance outwash. This type of glacial deposit is left at the front of an advancing glacier and primarily consists of gravels and coarse sands. Advance outwash is capped by till.

Groundwater on the Gig Harbor Peninsula is produced from three aquifers. All three aquifers are confined where fully saturated and overlain by a low permeable unit. Shallow, perched groundwater zones exist in several locations on the peninsula where lenses of sand and gravel occur within lower permeable material. Water levels in the perched groundwater zones are slightly higher than those in the Upper Aquifer (EMCON 1992).

- Upper Aquifer. The Upper Aquifer is continuous across much of the Gig Harbor Peninsula, with the exception of the deeply incised area such as Wollochet Bay and Gig Harbor. This aquifer is typically found in Vashon Advance Outwash/Colvos Sand/Possession Drift units. Water table conditions exist in much of the Upper Aquifer and it generally mimicking ground surface.

- Sea Level Aquifer. The Sea Level Aquifer is present throughout the Gig Harbor Peninsula. This aquifer is typically found in Salmon Springs Drift/Double Bluff Drift deposits. The Sea Level Aquifer is characterized by a low elevation potentiometric surface up to 135 feet above mean sea level ((msl).

- Deep Aquifer. Borehole information for the two permeable units comprising the Deep Aquifer is very limited, and the lateral extents of the Deep Aquifer are not known. This aquifer is found in permeable layers in the pre-Salmon Springs deposits. At least two productive zones have been identified in the Deep Aquifer. Water level data for this aquifer is sparse, but several water level measurements indicate that the potentiometric surface is generally less than 100 feet above msl.

The peninsula is drained by multiple small streams that discharge directly to marine water. Annual precipitation on the Gig Harbor Peninsula ranges from 40 to 52 inches/year (in/yr) (Golder 2002). Precipitation on the Peninsula infiltrates into the ground, runs off to streams, or is lost to evapo-transpiration. It is estimated that between 13% (Drost 1982) and 17% (Golder 2003a) of precipitation is available for groundwater recharge (after contribution to baseflow is made).

The water that infiltrates the ground flows vertically downward to recharge the three aquifers found beneath the Peninsula. Horizontal flow directions of groundwater within aquifers is generally from areas of higher head to areas of lower head. Drost (1982) cites a generally downward component to

groundwater flow on the Peninsula, with groundwater generally flowing toward marine water bodies and to surface drainage channels.

Site Conditions

The 103rd Ave well is about ½ mile northeast of Shaws Cove Wells 1 and 2.

See Attachment #1

The upper 35 feet of drilling encountered glacial till, followed by interbedded sand and clay with seepage from 35 to 66 feet below ground surface (bgs). Brown water-bearing sand and gravel was encountered from 66 to 89 feet bgs. The brown color indicates weathering and is indicative of the Sea Level aquifer. The well is completed at a depth of 91 feet bgs (PGG, 2011).

Upon completion of the well in October 1998, it was pumped for 4 hours at 30 gpm, which resulted in 10 feet of drawdown, for a specific capacity of 3 gpm per foot of drawdown. As equipped, the well continues to produce 30 gpm. (PGG, 2011)

The construction details of the 103rd Ave well are summarized below in Table 4.

Table 4. Construction details of 103rd Ave well.

Well Id	***103rd Ave well***
Well Tag	AEF438
Date Drilled	11/2/1998
Well elevation (ft above mean sea level, msl)	63
Well diameter (inches, in)	6
Completed depth (ft below ground surface, bgs)	91
Approximate elevation, ft above msl	-28
Screened interval, ft bgs	84 to 89
ft above msl	-21 to -26
Static water level, ft bgs	53
ft above msl	10/28/1998
Date measured	
Pumping capacity (gpm)	30
Water bearing formation	Sea Level Aquifer

Impairment Considerations

Impacts to area users

New water rights have the greatest potential to affect wells completed in the same aquifer near the new point of withdrawal. In this case, wells cross gradient or between the 103rd Ave well and marine water are more likely to be influenced by pumping than wells further away and upgraident. The 103rd Ave well is 2,500 feet from Hale Passage to the south and 3,000 feet from Horsehead Bay to the west.

This proposed new water right will authorize 30 gpm and 14 ac- ft for municipal supply from the 103rd Ave well. This well has been operating as a Group B exempt well water system. Although the annual quantity pumped will increase, the instantaneous rate will stay the same. Area groundwater users should not expect to experience any additional affects in their wells.

A query of Ecology's water right (WRTS) database revealed the following in roughly a one-half mile radius:

- Two groundwater certificates and one permit totaling 181 gpm and 21.75 ac-ft per year for domestic supply and irrigation.
- Thirty groundwater claims are registered for domestic supply and irrigation. The validity and exact location of wells under these claims is not known.

Ecology's well log database identified seventy wells in Section 21, T. 21 N., R. 1 E., the same township, range, and section of the 103rd Ave well:

- Thirty-seven are less than 100 feet deep.
- Twenty are between 100 and 150 feet deep.
- Thirteen are more than 150 feet deep.

Washington Department of Health (WDOH) Sentry database lists two Group B systems owned wells are around the 103rd Ave well. Both are roughly 1,500 feet south. Based on expected aquifer response to pumping, at a distance of 1,500 feet, interference drawdown should be less than one foot. (PGG, 2011)

Impacts to surface water

The 103rd Ave well and Shaws Cove wells lie in the Shaws Cove-Hale Passage watershed on Puget Sound and are not near any perennial streams. Groundwater intercepted by pumping the 103rd Ave well is water that would otherwise discharge to marine water and will not affect regulated surface water in the WRIA.

Potential for Seawater Intrusion

Chloride concentrations caused by increased pumping of groundwater has degraded the groundwater quality in the southern Gig Harbor Peninsula. Golder Associates (2003b) reported increases in chloride concentrations of some area wells to over 120 milligrams per liter (mg/L) since the early 1990's. The current MCL for chloride, according Federal standards, is 250 mg/L based on aesthetics (taste).

Shaws Cove water system also utilizes two additional wells about 2,500 feet south of the 103rd Ave well, much closer to marine water. Ecology recommends annual chloride testing of both wells. Chloride data collected in 2010 showed chloride concentrations of 9 mg/L.

PGG (2011) assessed the potential for pumping the 103rd Ave well to cause seawater intrusion. Using an analytical equation (Strack, 1976), PGG (2011) used annual withdrawal rate of 14 ac-ft using the maximum pumping rate of 30 gpm (for 30 days) and a continuous steady-state pumping rate of 8.7 gpm. At 30 gpm for 30 days, the saltwater interface was predicted to move landward less than two feet. At the continuous rate of 8.7 gpm, the saltwater interface was expected to move less than one foot inland (PGG, 2011).

Keeping pumping rates low will reduce the risk of seawater intrusion by preventing a pronounced cone of depression from developing that draws up saltwater. , Ecology is not recommending annual chloride

testing of the 103rd Ave well. RVWC is monitoring chloride levels at Shaws Cove Wells 1 and 2, which are closer to marine water.

Public Interest Considerations

Approving G2-30567 is not detrimental to the public interest and consistent with RCW 90.54.

FINDINGS AND CONCLUSIONS

This application requests water for multiple domestic supply. Based on my evaluation, I find that:

- The use of water for municipal supply purposes is defined in statute as a beneficial use (RCW 90.54.020(1)).
- Water is available in sufficient quantities to provide a reliable source, based on well and pump information.
- The issuance of this water right will not impair any senior water right holders.
- Approving this appropriation is not detrimental to the public interest.

Purpose of Use and Authorized Quantities

The amount of water recommended is a maximum limit and the water user may only use that amount of water within the specified limit that is reasonable and beneficial:

The amount of water recommended is a maximum limit and the water user may only use that amount of water within the specified limit that is reasonable and beneficial:

- 30 gpm.
- 14 ac-ft per year.
- Municipal supply purposes.

Point of Withdrawal:

- SE¼, SE¼, Section 21, Township 21 North, Range 1 E.W.M.

Place of Use:

- As described on Page 1 of this Report of Examination.

Tammy Hall — Date 7/5/2012

If you need this publication in an alternate format, please call Water Resources Program at (360) 407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Selected References

Drost, B.W., 1982. Water Resources of the Gig Harbor Peninsula and Adjacent Areas, Washington, USGS Open File Report 81-1021.

EMCON, Inc. 1992. Gig Harbor Peninsula Ground Water Management Plan, Task 5 Hydrogeologic Evaluation Report. Portland, Oregon. Prepared for the Tacoma-Pierce County Health Department.

Garling, M.E., and Dee Molenaar, et al. 1965. Water Resources and Geology of the Kitsap Peninsula and Certain Adjacent Islands, USGS Water Supply Bulletin No. 18.

Golder Associates, 2003. Report on Groundwater Rights Evaluation Application G2-28952 (Shaw's Cove Well #2) Redmond, Washington.

Golder Associates, 2003a. Kitsap Watershed Planning (WRIA 15) Instream Flow Assessment Step B Draft Report. Redmond, Washington.

Golder Associates, 2003b. Kitsap Watershed Planning (WRIA 15) Water Quality Technical Assessment. Redmond, Washington.

Jones, M.A. 1996. Thickness of Unconsolidated Deposits in the Puget Sound Lowland, Washington and British Columbia, a Contribution of the Regional Aquifer-System Analysis Program. US Geological Survey.

PGG, 2011, Technical memorandum to Bob Blackman and Jerry Wakefield, RVWC, August 23, 2011

Strack, O. D. L. (1976), A single-potential solution for regional interface problems in coastal aquifers, Water Resources Research, 12(6), 1165-1174.

ATTACHMENT 1